

# food digest

National Information Centre  
for Food Science and Technology.  
Central Food Technological  
Research Institute Mysore



NISSAT  
Department of  
Science and Technology



**CENTRAL FOOD TECHNOLOGICAL RESEARCH INSTITUTE, MYSORE-570 013**

**NATIONAL INFORMATION CENTRE FOR FOOD SCIENCE  
AND TECHNOLOGY (NICFOS)**

**SUBSCRIPTION ORDER FORM**

Dear Sir,

Please enter my / our subscription(s) for the following publications for 1981

- 1.
- 2.
- 3.

Date :

Signature :  
Name and  
Address :

Amount enclosed :

Demand Draft / Postal Order in the name of The Director, CFTRI, Mysore-570 013, India.

.....

	Annual Subscription
Food Technology Abstracts (Monthly)	Rs. 45-00
Food Digest (Quarterly)	Rs. 30-00
Food Patents (Quarterly)	Rs. 15-00



# **Food Digest**

**Volume 3 Number 4**

**October/December—1980**

**National Information Centre for Food Science and Technology  
Central Food Technological Research Institute, Mysore-570013  
India.**



## **CONTENTS**

1. RAW MATERIALS	141
2. STORAGE & INFESTATION CONTROL	141
3. FOOD ADDITIVES	142
4. PROCESSES	143
5. BYPRODUCTS & WASTE UTILIZATION	148
6. PROCESSED PRODUCTS	148
7. EQUIPMENT & MACHINERY	149
8. PACKAGING	159
9. ANALYSIS	162
10. COMMERCIAL INTELLIGENCE	164
11. FOOD REGULATION, QUALITY CONTROL & HYGIENE	171
12. TRANSFER OF TECHNOLOGY & NEW INDUSTRIES	185
13. PERSONALIA	—



## RAW MATERIALS

### 255 IDA assists cashewnut projects

The credit of \$ 22 million of International Developments Association, will help finance a \$45.7 million project to improve cashewnut production in Andhra Pradesh, Karnataka, Kerala, and Orissa. It includes new plantings on 53,775 hectares and improvements on 7,500 hectares. The project will also strengthen cashew research and implement a training programme. At full development, the project will help increase annual production of about 53,000 tons of raw nuts valued at \$51 million (in terms of 1979 prices). The income of about 40,000 small holders, the majority of whom are subsistence farmers, will be increased. The project will also generate additional employment opportunities in the rural sector and will secure about 35,000 labour-years of employment in the cashew processing industry.

The credit is for 50 years. It is interest free, except for a service charge of 3/4 or 1 percent per annum to meet IDA's administrative costs.

(United Nations Weekly Newsletter. 31(20), 1980, 4)

## STORAGE & INFESTATION CONTROL

### 256 Extending the life of commercial fruit

Dr. Shimshon Ben Yehoshua and David Nahir have developed a method of seal packaging individual fruits and vegetables in a special polyethylene film. The technique preserves the produce longer than the common waxing method and is simple and inexpensive. The high density polyethylene wrap has aroused interest in all over the world including the United States and Australia.

The waxing process involved dipping the fruit in a solution containing high density polyethylene. The technique had been used in the past but the formula for making up the solution was new. It proved more effective than earlier polymers and was adopted by many countries. The synthetic coating to the fruit provided a substitute for the fruits

natural wax. The wax had been lost at an earlier stage of the packaging process when the fruit was disinfected. By this treatment sealed fruit maintains its fresh appearance and flavour up to a year while conventional fruit begins to deteriorate after two months. The film protects rot spreading from one fruit to another. A sealing machine has been developed which efficiently wraps the fruit in the new film patent for the entire process is now pending in various countries.

(News from Israel. 27(7); 1980; 14-15)

257 Electrons help fight pests

Siberian nuclear physicists suggested using fast electrons. To this end, a group of physicists constructed a unit at the grain elevator of the Siberian Grain Research Institute. Infected wheat was delivered there from the country's southern areas. The first 430 tonnes were exposed to a wide electron beam. The result was excellent: the unit processed over 100 tonnes of grain an hour ensuring the required effect on the insects.

The Institute of Nuclear Physics has gathered a large sample collection of items manufactured by the radiation method-like heat-resistant cables of various makes with polyethylene insulation and all types of thermal-shrinking polymer pipes, hoses, etc.

(Invention intelligence. 15(3); 1980; 100-101)

### FOOD ADDITIVES

258 Additives Council formed

The International Food Additives Council has been organized to represent the manufacturers of food additives. It will have three major goals; to provide and encourage open communication about food additives; to serve as an information resources for food additives in general and specific food additives, including direct and indirect additives; and to conduct and monitor scientific research, conferences and reviews for the continuing evaluation of food additives.

(Food in Canada. 40(3); 1980; 11)

259 Encyclopedia of food chemicals - 1980

The 1980 Encyclopedia has been updated to contain all food additive amendments to the Food and Drug Regulations which appeared in the Canada Gazette during the period March, 1979 to February 29, 1980. This has been reproduced in Food in Canada and contains the description and use of each chemical in condensed form.

(Food in Canada. 40(4); 1980; 23-50)

## PROCESSES

## 260 Protein enrichment by simplified technology

In order to be economically competitive, the production of protein from starch should not be undertaken by classical fermentation in liquid medium, under aseptic conditions, followed by biomass separation and drying. The optimization of such sophisticated technology would require a minimal production of well over the potential market of most developing countries, and would result in high investment and operation costs. Moreover, in the developing countries, the collection, transportation, and storage of large quantities of raw materials would result in major difficulties.

Considering these factors, a more practical approach would be to enrich starchy materials with protein by means of a simplified technology that can be applied at the farm or village level, and that would allow the combination of cultivation of raw materials, its conversion into protein, and its direct utilization for animal feeds. Economically, a great and decisive advantage of such an integrated procedure is to prevent intermediary profits and speculation that would inevitably take place if either the raw material or the final product were commercialized.

To be workable at the farm level, a protein enrichment process should be one not requiring aseptic conditions, and should be done in a single operation. Additionally, the product must be sufficiently rich in protein to be utilizable as such, without a secondary fortification step. This last requisite creates a biotechnological difficulty that has been responsible for the failure of many previous attempts to achieve direct protein enrichment of starchy materials. In a mash of raw material dense enough to be directly utilized for animal feeding, the major problem is to maintain aerobic conditions and oxygen transfer efficiency so as to prevent anaerobic contamination of the culture.

A new procedure of solid-state fermentation fulfilling the above specifications was developed in collaboration with Drs. M. Rimbault and F. Deschamps at the French Office of Scientific and Technical Research Overseas (ORSTOM) and the Institute of Research in Applied Chemistry (IRCHA), respectively.

All of the operations are carried out in a 10-kg commercial dough mixer, modified for that purpose. The coarsely ground raw material, with 30-35 percent moisture content, is gently steamed for 15-20 min. to break up the starch granules. After cooling to 40°C, the preparation is mixed with water containing inoculum (spores), the nitrogen sources (ammonium sulphate and urea), and mineral salts, to 55 percent final

moisture content. After mechanical stirring, the inoculated substrate spontaneously takes the form of well separated and uniform granules of about 1 mm diameter.

Aeration is performed by passing humidified air through the perforated bottom of the tank. Conventional probes are used to monitor, after mixing and water spraying, the temperature, pH and moisture content. To date, all experiments have been performed with a selected strain of *Aspergillus niger* having high amylolytic activity and suitable amino acid composition. However, other filamentous fungi could be utilized as well.

With the organism currently being utilized, the optimal temperature is +40°C, but growth still takes place at temperatures from +30°C to +40°C without significant changes in the final protein yield. The initial moisture content is critical, with an optimum of 55 per cent. In the course of fermentation, the water content is progressively increased to a final concentration of 70-75 per cent.

This method of protein enrichment has already been worked out with a variety of starchy materials, namely cassava, whole potatoes, potato waste from industrial starch works, and banana waste. After 30 hours of incubation, a product is obtained that contains on average, 20 per cent true proteins. The rate of conversion of carbohydrates to protein is 20 to 25 percent.

(UNU Newsletter Supplement. 4(2); 1980; 2)

#### 261 Meat netting reduces drip loss

Keymesh Ltd have produced a spirally constructed latex meat netting which will grip and hold a cut of meat. Meatmesh enwrapped joints were passed through processes of boiling, stewing and roasting with, savings of up to 70% over stringtying, achieved without the netting affecting the quality of the meat.

(Food Flavouring Ingredients Packaging & Processing. 1(5); 1980; 47)

#### 262 Harnessing heat from the cooling of milk

An increasing number of UK dairy farmers are installing equipment that harnesses the heat given off by milk being cooled, and transfers it to water that can then be used in the dairy for cleaning.

When milk is cooled on the farm from around 32 to 4°C, the considerable volume of heat given off is normally wasted to the atmosphere. How to use this waste heat has been known for many years, but it is only in recent years, with increased fuel charges, that the cost savings in heating water have been high enough to justify the initial cost of the necessary equipment.

Every dairy farm in the UK will soon be equipped with refrigerated bulk milk tanks for cooling and storing its milk. The temperature of milk in these tanks is lowered by a refrigerant and, although this itself is normally cooled by an air-cooled condenser, the addition of a primary water-cooled condenser, known as a heat recovery unit, can enable most of the heat in the milk, to be transferred to water.

The amount of heat transferred depends on such factors as the volume of milk and the ambient temperature, but an investigation by the Agricultural Development and Advisory Service, has shown that it should not be difficult to raise the temperature of the water to between 55 and 60°C, a big saving in fuel costs.

(Indian Dairyman. 32(2); 1980; 143)

## 263 Efficiency of various methods of cooking

Efficiency of gas and electric range and wood cooking stoves are discussed below:

Gas Ranges - In the U.S. the average energy required to cook food per family on the surface of a gas range is 900 kcal/day and the energy required to cook food in the oven is 120 kcal/day with a total of 1,020 kcal/day, enough to boil approximately 10 litres of water. The total energy input in a gas range is 6,900 kcal/day which means that the overall efficiency of a gas range is 15%. The remaining energy is lost in pilot lights (41%), thermal inertia, vents, wall and other losses.

An interesting point notice is that the surface without pilots have an efficiency of 48%, and would therefore only require 1,850 kcal/day to accomplish the surface cooking which is almost 90% of the average cooking demand in energy terms. Oven efficiency even without its pilot is only 6%.

Electric Ranges - The energy required to cook food on the surface or in the oven are, of course, the same as in the gas range, 900 and 120 kcal/day respectively for a total of 1,020 kcal/day. The surface burners of electric ranges have a higher efficiency (73%); the oven also is better with an efficiency of 25%. In combination, this gives an overall efficiency of 59% clearly superior to the gas range if one ignores how one gets electricity.

Primitive Wood Cooking Stoves - Frequently cooking is done in an open fire protected by a few stones on top of which the cooking pots are supported. Closed fires are also used with no draft control and chimney. A primitive cooking stove using wood requires 4,500 kcal/day/capita or more which corresponds to 20,000 to 25,000 kcal/day for a typical

family of 4 or 5. Out of this energy only approximately 1,000 kcal/day are needed to cook the food; this corresponds to an efficiency of 5%.

The amount of wood needed to supply 20,000 kcal/day corresponds to approximately 6-7 kg. of dry wood/day or 2.0-2.5 tons per year to satisfy the needs of a family.

The three methods are compared below:

Comparison of cooking methods

	US 1976 Gas range	Electric range	Rural (Wood)
Primary energy input	6,900 kcal/day	1,810-5,700 kcal/day	20,000 kcal/day
Overall efficiency	15%	18-59%	5%
Efficiency of surface burners	48%	13%	-
Reason for low efficiency	Pilot lights	-	Small solid angle
Approximate price of stove	US \$ 294	US \$ 344	Less than US \$ 10

(Documentation notes: Tata Energy Research Institute, February 1980; 14)

264 New meat cooking process

A firm in USA has come up with a new, inexpensive technique for preparing and cooking large quantities of processed meat.

Called "Thermaljet," the new process is at least 70% more energy-efficient than conventional processes, and it is expected to cut cooking times by 70%.

Thermaljet is a radical departure from conventional processing-immersion in hot water or baking in an oven—which depends on static heat transfer. In the immersion process, meat in plastic bags is cooked for six or seven hours in a tank of water heated at 165° to 185°F. The conventional baking process cooks the meat in an oven at 350° to 425°F for three to four hours.

Thermaljet, in contrast, shoots continuous streams of recirculating hot water at the meat, which is packed in plastic bags. The Thermaljet "Cooker" is an 8 ft. tall cabinet, which only needs a total of 140 gallons of water heated at 200°F. Cooking only takes one to two hours.

The secret of the process is dynamic heat transfer, as opposed

to static transfer of conventional processes. As quickly as the heat of the water spray is absorbed by the meat, the cooled water is replaced by more hot water and recirculated through the heating unit. The pressure of the water also tenderizes the meat, forcing out some of its natural juices, which form a marinade with the flavoring agents injected before cooking. The pressure-flavoring eliminates the need for the usual marinating step before cooking. The new compact process is being introduced commercially by Grow Group Inc., of New York, which bought rights from its inventor.

(Food in Canada. 40(5); 1980; 10)

265 Energy balance for the various milk marketing systems (100,000 L Milk per day)

				bulk vending			Polyethylene Sachets		
	Steam (kg)	Oil (kg)	Elect- ricity (kwh)	Steam (kg)	Oil (kg)	Elect- ricity (kwh)	Steam (kg)	Oil (kg)	Elect- ricity (kwh)
A. Manufacturing									
1. Glass milk bottles	-	720	200	-	-	-	-	-	-
2. Aluminium foil	-	-	1,800	-	-	-	-	-	-
3. Kraft paper	-	-	-	-	-	-	-	-	-
4. Polyethylene	-	-	-	-	-	-	-	800*	560
B. Transportation to Dairy									
1. Milk Bottles (replacement)	-	52	-	-	-	-	-	-	-
2. Tetra Pak paper/polyethylene sachets	-	-	-	-	-	-	-	-	-
C. Milk Processing and Transportation									
1. Reception & pasteurization at Feeder/Balancing Dairy	5,500	-	4,400	5,500	-	4,400	5,500	-	4,400
2. Transportation to city siding	16,956	-	-	16,956	-	-	16,956	-	-
3. Transportation from city siding to city dairy	-	-	-	-	-	-	-	-	-
4. Reception, processing & packaging at city dairy	-	-	-	-	-	-	-	-	-
5. Distribution transportation	-	400	-	-	80	-	2,000	-	100
6. Distribution	-	-	-	-	-	-	-	-	-
D. Total	34,456	1,120	-	34,456	1,120	-	34,456	1,120	-

Total energy input (kwh)

\* Oil by-products

(Economic times. 4th August, 1980; p 4)

## BYPRODUCTS & WASTE UTILIZATION

### 266 Use of waste egg shells

Ground egg shells can be used with advantage in abrasive compounds for mild cleaning operations. This use of egg shells was found by the Paint Research Association of UK. After washing, drying and grinding, the egg shell powder was found to be an excellent abrasive cleaning material, particularly for cleaning softer stonework, removing old paint residues and cleaning softer metals such as aluminium. One particular advantage is that ground egg shells is less severe in abrasive action than the harsher commercial grits and silica. This property is useful when cleaning monuments and buildings of softer stone where damage could ensue from the use of harsher abrasive compounds.

(Indian Chemical Journal. 15(2); 1980; 26)

### 267 Protein-producing bacterium

The Indian Institute of Experimental Medicine (IIEM), Calcutta, has developed a beneficial strain of the bacterium *E. coli*. The new mutant strain can be used to produce amino acids, methionine, lysine and threonine.

Production of these amino acids, with the help of the mutant strain involves only single stage fermentation process, conditions for which have been standardised by the Institute.

(Indian Express. 20th September, 1980; p 4)

## PROCESSED PRODUCTS

### 268 Beverage from dried Ber (*Zizyphus mauritiana Lam*)

Ber (*Zizyphus mauritiana*) is grown widely in the northern region of our country over an area of 24, 457 acres. This fruit has not been commercially exploited for preparing any product although attempts have been made earlier to produce candy, canned and dried ber.

A ready-to-serve beverage containing 33% juice was prepared from this fruit. The process involves cooking the fruit (1kg) with 6 l. of water for 60-80 min. and extracting the juice through a basket press. The extract was allowed to settle and the clear juice was separated. The average yield of juice was 200 ml per 100 g dehydrated fruit. The juice had a pH of 3.75 and 19.6° Brix with 0.56% acidity. The juice possessed slight acrid taste, a typical dried ber flavour and reddish

brown colour and was not found acceptable. Hence a ready-to-serve beverage with 33.3% juice and 20.8° Brix and acidity of 0.51 was prepared which was organoleptically acceptable. The ber juice after processing at 80°C for 10 min stored well for 9 months at room temperature (20-38°C).

(J. Food Science Technol. 17(3); 1980; 158-159)

## EQUIPMENT & MACHINERY

### 269 Machine for continuous processing of tea leaves

The Toklai Experimental Station of the Tea Research Association, Jorhat is successful in producing 'orthodox' type of black tea or 'green tea' in a continuous manner and is also fully suitable for use in conjunction with the C.T.C. machine for production of 'C.T.C.' teas. Hence, the new device will replace not only the batch-working 'rolling table', but also the rotorvane and B.L.C., etc., and will make green tea leaf processing a continuous system for production of any type of tea. Besides offering a solution to the problem of processing green tea leaves in a continuous manner for production of 'orthodox' type of black tea and 'green tea', the present invention has the following advantages:

1. Saves 67% of power required for processing green tea leaves for making 'orthodox' or 'green' tea. This amounts to around 25% saving in the total power requirement for the manufacture of 'orthodox' tea and works out to  $25 \times 10^6$  kwh power saving per year.

2. Saves up to 75% of capital cost, running cost, space and weight.

3. Makes tea factory working easier because no batch working programme for green leaf processing is required.

4. Offers easier control and better product in all respects, including quality and valuation.

The machine has been named 'Boruah continuous roller' and offered to the tea industry on a commercial basis.

(Protein Foods and Nutrition Development Association of India Newsletter. No. 36; June 1980; 1,2)

### 270 Pressure solvent extraction plant

The R.I. Techno Works of Bombay have introduced a new concept by which maximum oil can be extracted at minimum cost. The Plant is superior to prevalent continuous solvent extraction plants and is being

put up and run successfully in Bombay.

Solvent extraction of oil bearing materials under appreciable pressure affords higher process temperatures, better penetration of solvent, much shorter extraction cycle, better heat economy which results in extracting the oil from the material completely and qualitatively. The reduction in contact time between solvent and raw material and the extraction in absence of air helps in de-oiling the raw material fully and better solvent economy per unit of raw material and oil produced.

The solvent loss in this plant is as low as 12 ltr/ton and oil content in de-oiled cake is as low as 0.7%. It is not possible to incorporate more than 20 MTD of extraction plant under SSI scheme. But then higher capacity of the plant is economically possible.

After extracting the oil from oil seed the cake can be resold at nearly the same price - that means eating the cake and having it too.  
(Beverage & Food World. 7(1); 1980; 12, 20)

#### 271 Low cost bottle washer

A small scale sole-proprietor type factory in Kuala Lumpur manufacturing bottled local foodstuff has developed a low-cost bottle washing machine. There were two designs, both were fitted with an electric motor and simple pulley drive, but each had a different washing capacity depending on the number of brushes being fitted. Model I using four brushes with an estimated capacity of 720 bottles per hour utilizing only two workers. Model II, fitted with two brushes can churn out 360 bottles an hour using only one man. Further improvements to this simple but ingenious device were of course possible and being contemplated.  
(Technonet Newsletter. 7(2); 1980; 10)

#### 272 High-speed water distiller

Edmund Scientific offer a high-speed stainless steel water distiller for use in photoprocessing, scientific and industrial laboratories. It easily produces 4.8 gallons (about 18.2 litres) of distilled water per day from ordinary tap water. Water is vaporized in the boiler, condenses in an aluminium-finned cover, then flows into a one-half gallon (1.9 litre) receiving bottle. The distiller shuts off automatically when the receiving bottle is full. A red light signals complete distillation. The unit is a compact, table-top model and includes four receiving bottles and complete instructions.

(Industrial Products Finder. 8(8); 1980; 20)

## 273 Continuous centrifugal separator

Hermetically sealed separators with solids-ejection mechanisms are used in dairies, in the refining of edible oils and fats and in the treatment of fruit juices, beer and wine. These have excellent hygiene characteristics, can be automatically or remotely controlled, and can be cleaned in place.

(Beverage & Food World. 7(1); 1980; 38)

## 274 New separators

Model SA160 is a high capacity self-clearing continuous clarifier designed for the brewing and food processing industries. Bowl capacity is 60 litres and it weighs approximately 2000 kg. Through-put is 150m<sup>3</sup>/hr with a solids per hour ejection rate of 4500 litres.

Model CSA 160 has been designed to remove ultra-fine particles and micro-organisms down to 0.5  $\mu\text{m}$ . Clarification efficiency levels close to those obtained with filters. Solids content after polishing can only be measured by turbidity meters. The high speed bowl allows gravitational forces exceeding 1500 g. There are two versions, one with a throughput of 20,000 litres/hr and another with a throughput of 50,000 litres/hr.

Model VA 70 has a self-clearing bowl with hydraulically controlled valves for solids ejection at pre-determined intervals. Designed for continuous separation of two liquids with different specific gravities, as well as for removing soft and yeast-like solids, it is said to be ideal for separating liquids which normally tend to emulsify. Maximum throughput is 16000 litres/hr.

(Food Processing Industry. 49(578); 1980; 55)

## 275 Rotary-motion shaker

Metrex Scientific Instruments Pvt. Ltd. manufacture continuous-duty rotary-motion shaker which gives a uniform circular motion of 25 mm diameter in a horizontal plane. Speed is variable from 125 to 350 RPM. Rotation effect ranges from a gentle rise-and-fall of the liquid to vigorous swirling. The selected speed of rotation is said to be constant regardless of load or line voltage fluctuation. The device is used for research and analysis, particularly for microbiological and tissue culture work. Rotary motion of flasks aerates fermenting material and prevents crust formation during evaporation. A quarter-hp capacitor-start motor is included. Variable-speed pulley system permits speed variation by means of a knob. Various sizes of flasks are supplied

ranging from 25 to 1,000 ml. Also available are individual spring clamps for Erlenmeyer flasks.

(Industrial Products Finder. 8(8); 1980; 77)

276 Horizontal leaf filter with centrifugal cleaning

An automated equipment which combines in one compact unit the functions of a filter, extractor, washer, reactor and dryer is now available to the Indian process industry.

The filter is available in two types. Type A is designed primarily for cases where a clear filtrate is required and direct or pre-coat filtration can be used. The solids are discharged as slurry. Type R Filter is also suitable for direct or pre-coat filtration. Once the filtration itself is completed the solid cake may be: (a) rewashed; (b) extracted with solvents or other liquids; (c) air blown; (d) steamed. After the final processing, the solids can be discharged as a dry residue leaving no subsequent disposal or effluent problems.

When filtration is completed the liquid remaining in the vessel is filtered by the unique patented heel volume filtration technique which permits 100% filtration of a batch. The filter is built with a number of circular filter plates with filter screens on the upper side only. These filter plates are fitted on top of one another on a vertical, perforated hollow filter shaft. This assembly forms the filter nest. The filtrate passes down the conical part of each disc into the hollow shaft. During filtration the filter nest is static. It is rotated only for removal of solids from the discs and the filter.

The filter is never opened during any phase of the cycle thereby eliminating manual cleaning. Discharges of solids by centrifugal spinning of the filter nest is effected in seconds. The filter is easily sterilized and air-free operations are possible.

(Seminar reporter; 10(5); 1980; 10-11)

277 Cashew-nut mechanical sheller

The cashew-nut processing industry is very labour-intensive by nature, and the prevailing high prices, supported by a continually strong market demand, have enabled it to become rapidly a very significant activity of the cottage industry sector in Thailand. Mainly because of this, the Cottage Industries Development Division in Thailand has developed an indigenous design of a cashew-nut sheller.

In the traditional shelling method, a worker uses an ordinary paring knife to split the shell. This method is not only hazardous, but also very time-consuming. Moreover, it causes a great deal of

105

breakage to the kernel, resulting in substantially lower prices that the final product can command in the market.

The improved design of the cashew-nut mechanical sheller is simple but effective. The machine splits the cashew-nut between two knife blades, each one of which is shaped to fit the basic contours of the nut. One blade, crescent-shaped, is fixed face up on the base of the machine, and the other, double crescent-shaped, faces down and moves in a vertical axis with the use of a spring loaded hand-operated lever. Each blade has a stopper strip running parallel with the cutting edge and is positioned at a distance from it, which is equal to the average thickness of the cashew-nut shell. This prevents the blade from cutting into, and thus damaging, the kernel.

The sustained production output with this machine, when used to shell roasted or fried cashew-nuts, has been established at approximately 1 kilogram of kernels per hour with 95 per cent of the output as whole nuts. The cost of the mechanical sheller is less than \$ 13. (UNIDO Newsletter. No. 142; 1980; 4-5)

#### 278 Coconut dehusking machine

Central Plantation Crops Research Institute at Rasorgod, has evolved a new machine which will help dehusk the coconut very easily. The machine costs Rs. 5/-, can be fabricated by any village blacksmith. With the help of another person about 1000 coconut can be dehusked in one day.

(Documentation Bulletin - Valkuntham Delta Smarak Trust, Bombay - No. 39, Section I; 1980; 12)

#### 279 Automatic egg breaking machine

A new model has been added to the range of egg breaking machines marketed by Sanovo Engineering A/S. With this new model Sanovo 2002 Automatic Egg Breaking and Separating Machine with automatic egg loading it is now possible to break up to 22,000 egg/h. The machine is further constructed to keep rejected eggs and accidental whole eggs separated from the yolk and white enabling the manufacture of clean egg products. (Beverage and Food World. 7(1); 1980; 33)

#### 280 Baking oven

Baking time reduction up to 40% with 25% energy savings are possible with the first convection baking oven available from Sandvik Conveyor, Inc. The bake oven operates on the forced convection principle that moving air, as a heat carrier, is more effective than applying heat by

radiation only. The system maximizes flexibility of operation and control while increasing the heat transfer rate. It is designed for all continuous baking processes which require specific time, temperature, and humidity conditions such as cookies, crackers, biscuits, bread, pie, shredded wheat, and other bakery items.

Faster baking times result from the combination of convection heating and controls that generate temperature profiles with maximum control response and levels. Single biscuits or partial loads can be baked with the same precision as a complete oven load. It can be fitted with fully modulating single or double burners and can use oil, gas, or electric elements for energy.

Engineered for easy accessibility and maintenance, the Spooner oven is adaptable to steel mesh, textile mesh, or solid steel band conveyors. Capacity can be increased by fitting additional modules to the existing system.

(Cereal Foods World. 25(3); 1980; 27)

#### 281 Spray Dryer

The Mobile Minor is useful for drying small quantities of test products. The spray dryer features a ceiling air dispenser to ensure control of the air flow pattern, rotary atomizer, air valve for activating the pneumatic lifting device, a cyclone which separates the powder and the exhausted drying air, a centrifugal exhaust fan with three-phase motor, and an electric air heater that provides drying air temperature of up to 350°C.

(Food Technology. 34(2); 1980; 101)

#### 282 Vertical mixer for dry mixing

Jayem's vertical mixer is used for dry mixing two or more ingredients. The principle of operation is to whirl the ingredients in the mixing chamber. Ingredients are loaded into the hopper at the bottom and lifted to the top by a vertical screw conveyor which revolves rapidly. The mixing paddles at the top whirl the particles fall to the bottom and they are elevated and whirled again and again until the mixture is a perfect and uniform mass. The loading hopper can then be swung aside, out of the way for sacking of mixture. Loading and sacking operations are easy. The sack is fixed to flanges of the sacker spout and the spout slide is pulled out. When the sack is full, the slide is pushed back into place. The mixer is driven at the top by means of a V-belt drive which couples the small drive motor to the main shaft of the machine. Speed of the main shaft is usually kept at about 100 rpm. Batch capacities available are: 125 kg, 250 kg, 500 kg and 1000 kg, based on

cattle feed density of 600 kg/m<sup>3</sup>.

(Protein Foods and Nutrition Development Association of India. Newsletter No. 21; 1980; 2)

#### 283 Mixer with different beaters

Fabdecon planetary mixer with different beaters is available in capacities ranging from 15 litres to 600 litres. It can be used for mixing liquid, liquid-solid, solid-solid combinations and can handle material of varied specific gravity and viscosities. Applications are in chemical, pharmaceutical, food and paint industries. The mixer can perform blending, kneading, emulsifying, cutting, grinding, aerating and drying operations. Materials of construction can be mild steel or stainless steel. Simple beater design eases cleaning operation. With a spare bowl, time lost in emptying and filling product can be reduced. Multi-speed helps eliminate dusting and splashing. The bowl can be jacketed for heating/cooling, and modified for mixing product under vacuum or pressure, over the range; 1 to 10 kg/cm<sup>2</sup>.

(Industrial Products Finder. 8(4); 1980; 23)

#### 284 Rotary vane feeder

The rotary vane feeder is used for discharging bulk material at a controlled rate from storage hoppers, storage silos, chutes, and screw conveyor troughs. It has a vanned rotor which rotates in a casing to transfer material from the inlet to the outlet, thus the inlet and the outlet are not in direct contact. It is therefore possible to discharge material with perfect sealing without disturbing gas pressure differential at the inlet and the outlet. This makes the feeder ideal for controlling dust discharge in pneumatic conveying, feeding and discharging processing machineries like vacuum driers. Flow rate can be controlled by varying the speed of the rotor. Sizes range from 0.3 litres/revolution to 24 litres/revolution.

(Industrial Products Finder. 8(6); 1980; 65)

#### 285 Air-powered diaphragm pump

Sandpiper air-powered diaphragm pumps are manufactured by the Warren Rupp Co., USA. Available in a range of sizes, these pumps handle practically anything that will flow and some things that will flow and some things that won't. Unique features include self-priming infinite flow control, handling viscous and thick slurries with minimum abrasive wear, easy portability, safety for volatile liquids and suitability for use in hazardous areas. Typical applications are: handling slurries, ceramic slip, petroleum products, plaster, chocolate, paint, chemicals,

resins, adhesives, sewage, latex, mine tailings, or waste oil.  
 (Industrial Products Finder. 8(6); 1980; 47)

286 India's first solar pump

India's first solar water pump has been installed at Awania, an un-electrified village in Gujarat.

The pump is sponsored by the Department of Science and Technology. It consists of 16 solar photovoltaic modules, two lead-acid truck batteries and a DC motor-pump of 25 w. capacity. The total photovoltaic array capacity is 112 Wats peak, covering an area of 210 square metre. Provision for manual tracking thrice a day is also provided in the array structure.

The water output from the motor-pump set is approximately 2000 litres per hour, with a daily output of about 7000 litres.

(Economic Times. 14th April 1980; 4)

287 Solar water heater-cum-solar still

A solar water heater-cum-solar still developed at the Central Arid Zone Research Institute (CAZRI), Jodhpur can provide hot water as well as distilled water.

The device basically comprises a double-walled box, the outer wall being made of 20-gauge mild-steel sheet and the inner one of 20-gauge galvanized-iron sheet. The air-gap (10 cm) between the walls is filled by glass-wool insulation. The inner box is blackened by black-board paint and is provided with a 3-mm thick glass cover at an angle of 20° from the horizontal. A distillate channel is provided for collection of distilled water and another channel is provided outside the tray for collection of rain water. The absorber area is  $1.16 \text{ m}^2$ . The basin is filled to a depth of 10 cm and holds 116 litres of water. The water level in the tank is maintained by a float-valve or, where there is no mains water supply, by an over-flow nipple provided in the tee-section.

The prototype device installed at Jodhpur can supply 100 litres of hot water at 45-55°C in the afternoon; if this hot water is transferred to a double-walled insulated drum, it could be maintained at a temperature of 35-45°C for use next morning.

In addition to hot water, the prototype also provides 2-6 litres of distilled water per day. On rainy days the device will also collect rain water as much as 17.3 litres from 10 mm rainfall. The main raw materials required for making solar water heater-cum-solar still are GI and MS sheets, plane glass, glass wool insulation, etc. The cost of

production of the device works out to Rs. 500, including cost of materials and labour.

(Invention Intelligence. 15(4); 1980; 145-146)

288 Powder/tablet/capsule filling machine

Transfill-15 is an automatic powder/tablet/capsule filling machine. It fills at a rate of 10/15 fills per minute of single integral drop and 20/30 fills per minute of double individual drop. The machine selects two sizes of tins/bottles just by a flick of a rotary switch. A no-container-no-drop device is included which provides for interlock with the weight filler. If there is no container under the filling head, the product, though ready for drop, will not drop. The machine can be fitted with weigh fillers, volumetric fillers or counters, depending mainly upon the type/structure and flow characteristics of the product. It can handle wide mouthed containers of metal, glass, fibre composite and even cartons.

(Protein Foods and Nutrition Development Association of India. Newsletter. No. 21; 1980; 1)

289 Oranges squarely bagged

Snapbest's new rapid orange bagger was developed in Australia to bag citrus fruits cheaply and more attractively. It displays the fruit in an extruded net bag in a geometric 7 x 2 configuration that gives an identical and almost maximum exposure to each individual orange.

The bagger comprises a raised rotating table on which the oranges are tipped before being discharged through the four chutes positioned in the centre of the table. An adjustable counter, for counts between two and 50, ensures that only the preset numbers are dispensed in pairs through the chutes into a snapset metal cage or basket below.

There are three of these baskets, each fitted to a rotating arm. When the present quantity of fruit has been discharged into one basket, the operator rotates the next empty basket into position, automatically initiating the next filling cycle. Meanwhile an extruded net bag is slipped over the new-filled basket which is then inverted, discharging the fruit into the net bag. The filled bag is removed and closed.  
(Food Flavourings Ingredients Packaging and Processing. 1(5); 1980; 47)

290 Heavy duty tenderiser

Ben Langen (UK) Ltd. have introduced a new heavy duty tenderiser to their range of meat tenderisers designed to process complete primal cuts

such as whole de-boned hams for shoulders and the larger beef cuts. The tenderiser is fitted with a 500 mm wide bank of blades, each knife being 150 mm in diameter. It is constructed in, 316 stainless steel and powered by a 3 hp geared motor. Meat is placed on the tenderiser in-feed conveyor and passes through the rotating bank of blades and is discharged into a trolley placed beneath, ready for further processing.  
(Food Processing Industry. 49(578); 1980; 55)

291 Refrigerator with water cooler

Fedders Lloyd's new Zenith 165 refrigerator-cum-water cooler has a built-in water cooler that provides cold water right outside the refrigerator-without the necessity of opening the door. Water is stored in a large capacity water tank inside the refrigerator and can be tapped conveniently at the water cooler. All one has to do is to raise the sliding window of the cooler, hold a glass against the release lever and fill up. Once the glass is removed, the water tap closes automatically. The sliding window should be brought down into place to ensure insulation. Besides providing water quickly and conveniently, the cooler system also increases the life of the compressor- and the efficiency of the refrigerator. It results in saving in power and frees a lot of space inside the refrigerator for storing other drinks or foods. The chance of the door liner breaking are reduced. At present, only the Zenith 165 refrigerators are offered with this facility. Other capacities manufactured by Fedders Lloyd Corporation will also be available with the water cooler in the near future.

(Industrial Products Finder. 8(8); 1980; 88)

292 Coloured stainless steel utensils

Coloured stainless steel utensils, would soon be coming to Indian markets. A leading Madras-based stainless steel utensils manufacturers have secured the process from Inco Europe Limited, a British firm, whose research centre at Birmingham has developed the process. The firm has already coloured some stainless watch cases in golden colour, for an Indian watch making unit. The firm claims that the colouring and hardening of stainless steel-a significant break-through in stainless steel technology is being introduced in India for the first time.

Basic colours bronze, blue, gold, red and green plus subtle variations of these basic colours could be achieved by this new process.  
(Seminar Reporteur. 10(4); 1980; 10)

## 293 Optics for microscopes

Melles Griot of Holland offer a complete line of microscope optics, adaptable to practically any type microscope. The objectives have international standard thread 36 TPI (1.42/mm) and all eyepieces are mounted in barrels 23 mm in diameter. The microscope objectives have magnifying powers from 1:1 to 100:1 with numerical apertures from 0.05 to 1.25. The flat field models are capable of resolving 1 micron lines. The selection of eyepieces comprises Huygens, Ramaker and wide field Kellner types with magnifying powers from 4X to 20X. All models may be equipped with standard 21 mm reticles. To improve image quality and sharpness all objectives and eyepieces have been crown glass anti-reflection coated.

(Industrial Products Finder. 8(8); 1980; 41)

## 294 Process equipment &amp; heat exchangers

T.V.S. Engg. Industries have established a fabrication facility for pressure vessels, reaction vessels, process equipment, heat exchangers, condensers, and bulk storage tanks for dyes and chemical industries. Ball mills and blenders for paint industry are also fabricated as a standard product range, or to suit specific requirements and designs. The equipment is fabricated as per standard codes, specifications and practices in the chemical industry. T.V.S. Engg. Industries design, erect and commission small-scale chemical plants for dye and oil industries. Also fabricated is materials handling equipment such as screw conveyors, slat belt conveyors, bucket elevators, and motor lifts.

(Industrial Products Finder. 8(8); 1980; 17)

## PACKAGING

## 295 Liquid/Semi-liquid product packaging

SERAC, France, design and manufacture packaging equipment for liquid and semi-liquid products. The machines fill by weight measurement and cap the bottles or containers by various means. Metering of liquid by weight control is such that the weighing mechanism is separated from the product to be filled facilitating packaging hot, cold, corrosive or abrasive products without difficulty. The weight of liquid does not vary with its temperature and no volume readjustment is necessary. The disassembling and cleaning is easy because no seal is in contact with the product. The range covers semi-automatic fillers with one nozzle, for a range from 0.1 to 60 kg, and in-line fillers with 3 to

6 heads and capping system, for 0.25 to 60 kg, with capacity of up to 20,000 cph. The SERAC equipment is used in food (dairy, oils etc.), chemical, home care and cosmetic industries.  
 (Industrial Products Finder. 8(7); 1980; 93)

296 Thin-walled plastic container

Maharajah Plastic Products, Bombay, has developed a low-cost, elegant, thin-walled plastic packaging of uniform grade. A wide range of standard formings like bowls, cups, lids, single packs, presentation packs, egg-trays, butter dishes, lunch trays, etc. are available. These thin-walled containers are most suitable for packing a wide variety of products of industries like dairy confectionery, pharmaceutical and even engineering. As compared to conventional materials, thin-walled containers are light in weight, yet sturdy enough to withstand handling and storage. They save on transportation costs because of their light weight.

(Industrial News Digest. 3(7); 1980; 12,13)

297 Milk freshness retained in Sachets

Prepac Aseptic machine produces thermo-sealed plastic pouches which preserve the freshness, taste and purity of UHT milk for several weeks. No refrigeration of the packs is required. The entire operation of sachet filling and sealing is electronically controlled.

(Industrial Products Finder. 8(8); 1980; 51)

298 Easy-open-end for dry canned products

METAL BOX recently introduced pull safe full-aperture easy-open-end, said to be ideal for cans for dry food products such as nuts, powdered milk, coffee, etc. and to provide protection from sharp edges on both the tear-out portion of the end and round the rim of the can.

The aluminium end is made with a compressed S-shaped fold in the metal near the outer edge where it is seamed onto the body of the can. The tear score is then made on top of this fold so that, when the end is removed, the smooth rounded edge of the fold protrudes beyond the raw edge of the tear.

To give protection from the raw edge on the body of the can, the top has been beaded or indented just below where the end is double-seamed to the can. This bead also gives extra strength and prevents the top flexing out of shape and accidentally rupturing the score.

The cans are vacuum/gas packable and are available with plastic overcaps.

(Food Processing Industry. 49(578); 1980; 59)

An Italian inventor Franco Sala has developed a plastic capsule that changes colour if frozen foods accidentally thaw at any time on their way to the consumer. Fitted to a window in package, the tiny colour-change label contains two chemical compounds. At deep freeze storage temperature they appear white. If the temperature rises above a critical level the compounds react and turn yellow or red as a visual warning.

(Indian Chemical Journal. 15(2); 1980; 27)

### 300 Hot melt adhesive dispensing guns

Two new hot melt adhesive dispensing guns for a wide variety of packaging applications within the food processing industry have been announced by Power Adhesives Ltd. following the success of their recently introduced SST model. The new guns are the Maximatic, a light weight design developed for easy handling and reduction of worker fatigue, and the SST TE, an all-electric model; both guns can be used for bonding all substrates including wood, paper and card.

A major new feature of both the Maximatic and the SST TE is the incorporation of a solid state temperature control which can be adjusted between 300°F and 475°F and maintains the temperature of the adhesive cartridge to within 5°F of the required setting. This ensures consistency in the flow of adhesive and open time with consequently, better, more stable bonds. Also common to both guns is the in built system of interchangeable non-trip adaptor nozzles which enable the user to change rapidly from one nozzle to another for applications where several thicknesses and configurations of glue-line are required. A wide variety of nozzle sizes and shapes is available, including spreaders for applications such as carton sealing, sealing where large quantities of adhesive are required and single hole nozzles for fine detail assembly work.

(Food Processing Industry. 49(578); 1980; 53)

### 301 Corrosion inhibitor for cooling systems

Rusbandh-30 is a package additive containing powerful corrosion inhibitor, fungicide, bactericide, pH stabilizers and passivating agents. It prevents corrosion by sacrificial oxidation of its ingredients and thereby removing the corrosion causing agents. The passivating agents deposit a protective film, having electrical insulation properties to prevent formation of anodes-principal focal point of corrosion. The bactericide and fungicide prevent the growth of organic matter on wood

or aluminium surfaces of cooling towers, thereby preventing its decay and corrosion.

(Industrial Products Finder. 8(6); 1980; 72)

## ANALYSIS

### 302 Automatic solvent extractor

A team of Indian Scientists have developed an automatic solvent extractor which is extremely versatile and finds applications in solid liquid, liquid-liquid (heavier or lighter) extraction at room temperature to the boiling point of the solvent. It is useful in the preparation and purification of fine chemicals, in industrial, agricultural and bio-chemical extractions, in analytical determinations etc. This has been used for purification of indicators to chromatographic purity, for preparation of protein-rich and fat-lean whole peanuts, for extraction of turpentine and other products from Salvia Balsam.

(Seminar Reporteur. 10(4); 1980; 22-23)

### 303 Gas chromatograph

The Universal Ferro & Allied Chemicals Ltd., (the parent company of NETEL) has designed and developed a gas chromatograph using professional grade electronic components and devices, with a working reliability, sensitivity and performance. The 32" x 22" x 18" units is priced around Rs. 70,000 and its performance according to its designers is equivalent to the imported units which cost around Rs. 1,40,000 in India.

The column over which is the heart of chromatographic system is designed for optimum performance with all types of columns. Because of the double wall construction with a static layer of glass wool between the walls, is thermal as well as temperature programmed oven operation is possible up to 400°C. The errors are therefore minimised which are prominent at lower and higher operating limits. Its other features are: front panel selection of parameters, access to internal circuitry from all sides, pushbutton opening and closing of oven door protection circuits to prevent over-heating of oven and carrier gas pressure switch that cuts off the instrument's power supply in the absence of carrier gas.

(Seminar Reporteur. 10(5); 1980; 24)

### 304 Leak detection instrument

The portable PacGuard 400 leak detection instrument can detect

weak heat seals, gross leaks or pinholes in blister packs, foil and plastic pouches, thermoformed cups, bottles, boxes and other small sealed packages. This instrument is capable of very rapid test cycles and can detect leak rates less than 0.001 cc/second without damaging the package sample.

(Processed Prepared Food. 148(3); 1979; 126)

### 305 Refractometer

Refractometer - called the "Concentrometer" - continuously determines the percentage of added ingredients or impurities present in liquid foods and beverages. The system features a sensory probe which operates on the surface contact light refraction principle and remains unaffected by coloration, opacity, bubbles or particulates. The electronic and optical concentrometer includes a waterproof analyzer which may be locally or remotely stationed.

(Food Technology. 34(5); 1980; 172)

### 306 Digital pH meter

Universal Biochemicals have designed a digital meter for laboratory determinations requiring high accuracy in pH as well as millivolt measurements. It features large, bright 0.5" (1.27 cm) red LED seven-segment display that removes the ambiguity of hard-to-read moving pointer meters. Convenient front panel controls include an on-off switch, standardisation knob, temperature compensation control 0-100°C and electrode lead connector. The rear panel houses the switch selector for pH and mV. Attractive modern design offers light weight, uses little bench space and has an adjustable tilt arm that doubles as carrying handle and bench support for positioning of front panel. The range is: 0-14 pH or  $\pm 1,999$  mV.

(Industrial Products Finder. 8(8); 1980; 53)

### 307 Digital grain moisture meter

The Central Scientific Instruments Organisation (CSIO), Chandigarh, has designed and developed a proto-type of a moisture meter to estimate moisture content in grains.

The principle behind the device is that the grains have a dielectric constant which varies with the moisture content of the grains. The variation in the dielectric constant is used to vary the effective capacitance of a suitable capacitor assembly. By measuring this capacitance it is possible to indicate the moisture content of the grains.

The device is based on integrated circuits (ICs) and the final

readings of moisture content are given on a 3-digit light-emitting diode (LED) display in percentage. The device can measure over a range of 5%-30% (accuracy  $\pm 0.25\%$  ( $\pm 1$  digit)). An automatic temperature-compensating arrangement is also included to make the measurements independent of the variation in ambient temperature.

(Science Reporter. 17(5); 1980; 354)

## COMMERCIAL INTELLIGENCE

### PRODUCTION (RAW MATERIAL)

308 All-India Final Estimates of Principal Crops, 1978-79

Crop	Area (Thousand hectares) 1978-79	Production (Thousands tonnes) 1978-79
<b>I. FOODGRAINS</b>		
Rice	40,195.9	53,828.7
Jowar	16,124.9	11,563.4
Bajra	11,341.5	5,515.4
Maize	5,779.1	6,219.3
Ragi	2,618.8	3,038.6
Small Millets	4,456.8	1,932.0
Wheat	22,220.1	34,982.2
Barley	1,836.1	2,120.8
Total Cereals	1,04,573.2	1,19,200.4
Gram	7,871.3	5,834.8
Tur	2,662.5	1,913.8
Other Kharif Pulses	7,359.4	1,994.6
Other Rabi Pulses	5,655.3	2,426.3
Total Pulses	23,548.5	12,169.5
Total Foodgrains	1,28,121.7	1,31,369.9
<b>II. OILSEEDS</b>		
Groundnut (Nuts in shell)	7,548.1	6,387.0
Castorseed	446.4	235.7
Sesamum	2,441.0	539.7
Rapeseed & Mustard	3,556.9	1,877.2
Linseed	2,024.8	513.6
Total Five Major Oilseeds	16,017.2	9,553.2
Nigerseed	620.4	150.6
Safflower	716.6	216.1
Cotton Seed*	8,086.6	2,713.9
Coconut	1,067.2	5,470.8@
<b>III. OTHER CROPS</b>		
Potato	790.3	10,125.4
Black Pepper	111.97	26.10
Dry Chillies	805.6	637.9

contd/\_

Crop	Area (Thousand hectares)	Production (Thousand tonnes)
		1978-79
Dry Ginger	34.33	67.17
Turmeric	82.2	146.8
Cardamom	96.2	4.6
Coriander	366.8	146.0
Sugarcane (Gur)	3,119.0	16035.2
Guarseed (for seed purpose only)	2,646.8	1,093.6
Tapioca	361.4	6,052.6
Garlic	49.2	163.7
Sweet Potato	224.8	1,545.4
Arecanut	117.2	166.3
Banana	270.3	4,546.0

\* - Area same as for cotton (lint).

@ - Million nuts.

(Agricultural Situation in India. 35(3); 1980; 226, 227)

309 All India Final Estimate of Guarseed (for seed purpose only) 1979-80

State	Area (Thousand hectares)	Production (Thousand tonnes)	
		1979-80	1979-80
Gujarat	168.1	54.7	
Haryana	179.9	124.9	
Punjab	44.6	52.2	
Rajasthan	1,434.5	143.5	
Uttar Pradesh	0.6	0.4	
All India	1,827.7	375.7	

NOTES : 1. Guarseed is not grown to any appreciable extent in others States and Union Territories not mentioned above.

2. No information regarding crop estimates is yet available from the Govt. of Sikkim.

(Directorate of Economics & Statistics, Ministry of Agriculture, Government of India)

## PRODUCTION (INDUSTRIAL)

310 Production of Pesticides

(Qty in tonnes)

	1977-78	1978-79
Insecticides		
B.H.C.	28,674	35,254
D.D.T.	4,175	4,475
Malathion	1,980	2,845
Parathion	1,554	2,242
Metasystox	163	208
Fenitrothion	312	401
Dimethoate	646	721
Phosphenidon	442	563
D.D.V.P.	207	278
Quinalphos	291	379
Phenthoate	56	11
Carbaryl	361	733
Fungicides		
Copper oxychloride	1,019	1,199
Thiocarbamates	1,371	1,662
Nickel chloride	27	48
Organo-mercurials*	141	130
Herbicides		
4-D	444	316+
Nitrofen/propanil	58	25
Puraquat (K.L.)	-	243
Bavistin	-	25
Rodenticides		
Ratafin	11	13+
Zinc phosphide	160	170
Fumigants		
Aluminium phosphide	418	591
Methyl bromide	53	34
Ethylene dibromide	34	40
Total	42,597	52,691

\* Production is in terms of 15% and 6%.

+ Provisional.

(Industrial News Digest. 3(6); 1980; 4)

311 Consumption of Pesticides

(Qty in tonnes)

	1973-74	1974-75	1975-76	1976-77	1977-78
Insecticides	38,850	48,345	46,420	41,070	46,570
Acaricides	130	140	150	160	160
Fungicides	10,337	9,600	9,185	8,553	9,685
Rodenticides	150	250	200	290	270
Weedicides	810	715	890	975	1,425
Nematocides	25	30	35	20	20
Plant growth regulators	15	20	25	20	25
Fumigants	150	130	250	830	820
Total	50,467	59,230	57,155	51,918	58,975

Consumption pattern of pesticides

	%	Val. in Rs.crores
Herbicides	7	11.7
Insecticides	75	125.3
Fungicides	15	25.0
Others	3	5.0
	---	---
	100	167.00

(Industrial News Digest. 3(6); 1980; 5)

## EXPORTS AND IMPORTS

312 Trends in India's Exports

Between 1974-75 and 1978-79, the quantity of exports of cashew kernels have declined from 60,000 tonnes to 27,000 tonnes. The exports have somewhat recovered during April-December, 1979 at 30,500 tonnes valued at Rs. 900 million as against 19,400 tonnes valued at Rs. 600 million in the corresponding period of the previous year. However, it may be mentioned that scarcity of imported raw nuts from the American suppliers continues to be a major hurdle in the way of exports.

Regarding exports of plantation products, the report says that the quantum of exports of both tea and coffee were lower during April-December, 1979, as compared to April-December, 1978. The quantity of tea exports seems to have picked up in the last quarter of 1979-80. As a result, exports of tea during the year 1979-80 amounted to 210.6 million kgs, valued at Rs. 3690 million as compared to 172.4 million kgs. valued at Rs. 3410 million in 1978-79. Despite a sizeable recovery in terms of quantity, the export earnings showed a comparatively

small increase due to further fall in the unit value realisation. Exports of coffee for the year 1979-80 are placed at 68,300 tonnes valued at Rs. 1760 million as compared to 66,300 tonnes valued at Rs. 1150 million. Despite a shortfall in the quantum of exports, the increase in the export earnings during the years 1979-80 by about Rs. 310 million was possible due to higher unit value realisation.

Increase in other agricultural items like rice and raw cotton was chiefly on account of comfortable supply position. Exports of oil cakes also increased. The export of sugar during April-December, 1979 amounted to 580,000 tonnes at a value of about Rs. 960 million. (Economic & Commercial News. 10(29); 1980; 3-4)

### 313 Exports of processed foods

	1978-79		April-December 1979	
	Quantity	Value	Quantity	Value
Meat, poultry products and animal casings	15158.8	1927.65	1766.2	1839.38
Biscuits & confectionary	4160.3	305.40	3571.8	277.89
Guar-gum & guar meal	71126.7	2412.86	36679.9	1592.59
Wheat bran	2012.6	14.35	980.0	10.96
Milk and milk products	1772.6	223.77	812.3	121.78
Starch and derivatives	32367.9	244.91	3811.0	68.63
Papads	1555.1	100.96	1115.3	100.79
Instant coffee	403.4	360.84	597.4	456.00
Instant tea	570.2	304.38	422.4	210.42
Walnuts	3806.3	606.66	2291.6	354.51
Fruit and vegetable products	135956.4	1513.56	10224.0	748.30
Fresh fruits and vegetables	129325.3	2233.95	87345.0	1687.08
Others	1201.3	686.80	452.30	582.71
		10934.09		8051.04

(The Economic Scene. 5(4); 1980; 33)

Qty: In tonnes  
Value : Rs. lakhs

### 314 Pepper exports by port of export

PORT OF EXPORT	January-November 1979	
	Quantity (Tonnes)	Value (RS'000)
Cochin	18,686.70	320,545.29
Madras	1.66	64.96
Bombay	480.43	7,621.66
Calicut	1.05	14.34
Tuticorin	0.96	28.90
	19,170.80	328,275.15

(Pepper News. 4(4); 1980; 40)

## TRADE INFORMATION

315 Trade Enquiries

Cardamom, Black pepper

Abdul Rahman Karmostaji,  
Director,  
M.W.A. Karmostaji Sons,  
P.O. Box. No.96,  
DUBAI, U.A.E.

Sultan Bin Essa Sons Co. Ltd.,  
P.O. Box 4098, Safat,  
KUWAIT.

Oleoresins, spices flavourings

D.E. Blenford,  
Bentec products Ltd;  
West View, Cotswold Road,  
Cumnor Hill,  
Oxford O X 2 9JG,  
England.

Dr. Paul Ndalut,  
Hamtorwall 18,  
4040 Neuss,  
West Germany.

Cardamom & cardamom essential oil

M. Brady,  
Biocon Ltd;  
Carriyanc Co. Cork,  
Ireland.

Henri Verreet,  
Managing Director,  
Rhine Valley Exporters Ltd;  
Koelner Straba 189b,  
D-4040 Neuss/Germany.

Internatio - productin B.V;  
Vanvollenhovenstraat 3,  
P.O. Box. 253,  
(Leetage) Rotterdam  
Telex: 21116 PPRO.NL

Kaib Gewitze,  
Dwlaohr Alle 62,  
75 Korlsmte 1,  
West Germany.

Turmeric

Carlos Gonzalex Schroth,  
Gerente De Exportaciones,  
B.International,  
Jose Liborno 106-Maranga,  
Lima 32, P E R U.

All spices

Dennis A. Jenks,  
Managing Director,  
Schwartz Spices Ltd;  
R. paterson & Sons Ltd;  
Jenks Brothers Ltd;  
Castle House,  
71-75, Desborough Road,  
High Wycombe, HP 11 2 HS,  
Bucks,  
ENGLAND

Enriqueta Thiercelin,  
General Manager,  
Tradimpex, JM  
Hiercelin,  
5, rue de la Corderie,  
Centre 356  
94596 Rungis Cedex,  
F R A N C E .

Francois Dozol,  
Aromaticien,  
Chaf Dpt. Aromes,  
V Mane Fils S.A;  
Produits Aromatiques,  
06620 Le Bar Sur Loup,  
F R A N C E .

Gulu Dhawan,  
General Manager,  
International Spice Trading APS,  
India Division,  
E 343-A, Ground Floor,  
Greater Kailash,  
New Delhi - 110 048.

Hamid Krauter - Stube,  
4500 Osnabruck,  
Neumarkt - Tunnd.

Holger Wittich,  
Nichio Boeki Co. Ltd;  
Higashi Nakano 5 - 10 - 15,  
Nakano - Ku,  
Tokyo/Japan.

Ikramuddin - Sahibzada,  
26-Mohd Jan Khan Wat,  
KABUL.

Iipo Ropponen,  
Factory Manager,  
Sok Meira,  
Fleminginkatu 36,  
00510 Helsinki 51,  
F I N L A N D .

All products for Indian CookingAll spices (contd.)

Edmond Terlinden,  
Managing Director,  
S.A. Improma N.V.;  
Rue Dautzenberg 36,  
1050 Bruxelles.

Madame Jean - Louis Stevens,  
Topo, Rue De L'avenir, 43,  
Toekomststraat, 43,  
Bruxeliles 1080 Brussel.

Mahmood Shahsavarani,  
Managing Director,  
Manaziran INC;  
3rd Floor, No.14,  
Bahar Shiraz Avenue,  
17 Shahrvir SQ,  
Tehran 15,  
I R A N.

Nicolas Klingenberg,  
Manager,  
Angel De Saavedra, 15,  
Cordoba,  
SPAIN.  
Tel: (957) 221930  
Telex: 76528-Carexe

H. Rosenkranz,  
232, plon,  
Lengestr 51.

Balwant Singh,  
Vice-president,  
Sandhar & Sons Ltd;  
Importers & Exporters,  
932A Denforth Avenue,  
Toronto,  
Ontario M4J 1L9.

Officer-in-charge,  
Stanislav Lorenc,  
Koospol a, s;  
Praha 3,  
Olsanska 1,  
Chekoslovakia.

Ursula Hoyk - Ossami, M.A;  
Assistant Managing Director,  
Tap International,  
Industrial Advisers,  
Chomeini Ave 222,  
P.O. Box 621,  
Tabriz/Iran.

Valtameri Osakeyhtio,  
0660 Helsinki 66.

T.S. Induhra,  
East End Foods (Midlawds) Ltd;  
Athole Street,  
Birmingham,  
E N G L A N D .

Erich Neuhausen,  
Kaufmann,  
Postanschrift,  
Kanalstrasse 36,  
Postfach 92,  
Neuss/Rhein,  
D-4040 Neuss 1,  
West Germany.

Samples of Oils and Oleoresin

Dr. C. Frischhorh,  
KFA-Julius, (Nuclear Research  
Centre),  
Institute J. Chemic-4,  
D-M7 Julich.

Spice mixes for retain shops in  
South Africa

Alum-phos,  
(Pty) Ltd;  
64 Urania St;  
Observatory,  
Johannesburg 2198  
P.O. Box 23992,  
Joubert part 2044,  
South Africa.

Groundnuts

A.D. Kleinjan,  
Grano drente bv;  
Moleneind 2 - 4268 gd Meeuwen,  
P.O. Box 1 - 4268 zg meeuwen,  
H O L L A N D .

Fennel Seeds, Fenugreek Seeds,  
Turmeric powder, Curry powder &  
Celery Seed

Mix,  
Trochengemuse,  
Gewurze,  
Heilkrauter tee,  
D-8711 abtswind,  
West Germany.

Rice, spices, pickles, handicrafts,  
vegetables, mangoes, cardamom  
toffee and biscuits

Oeoullis Klans,  
Indeg's  
2000 Hamburg 63,  
P.O. Box 630505,  
Edinburg A.

Whole green pepper/white pepper,  
cardamom powder, curry powder

Slotemake,  
Epos B V;  
Ringvaartweg 10,  
Beverwgh,  
H O L L A N D.

(Cardamom. 12(5); 1980; 15-19)

### 316 Expenditure on R & D

Total expenditure on Scientific Research and Development by central government, state governments and private sector increased from 173.37 crores in 1970-71 to Rs. 603.22 crores in 1978-79 i.e. an increase of 247.9 per cent or an annual average rate of increase of about 31 per cent. The share of central government, state governments and private sectors was 84.3, 7.6 and 8.4 per cent respectively of the total in 1970-71. In 1978-79 the share of central government declined to 81 per cent while that of state governments and private agencies increased to 8.1 and 10.9 per cent respectively.

(Economic Times. August 31, 1980; p 1)

## FOOD REGULATION, QUALITY CONTROL & HYGIENE

### REGULATION

#### 317 Indian Boiler Regulations 1980

- 1(1) These regulations may be called the Indian Boiler (Second Amendment) Regulations, 1980.
  - (2) They shall come into force on the date of their publication in the official Gazette.
- 2 In the Indian Boiler Regulations, 1952, in Appendix "K" in the list of "Well known Foundries", the following shall be added at the end, namely:
- "29. M/s Central Foundry Forge Plant A unit of Bharat Heavy Electrical Ltd., Ranipur, Hardwar".

(The Gazette of India, Part II, Section 3, Sub-station(i). No. 14; April 5, 1980; p.749)

#### 318 ISI Marking fee

S.O. 1970 - In pursuance of sub-regulation (3) of regulation 7 of the Indian Standards Institution (ISI) (Certification Marks) Regula-

trons, 1955, the ISI hereby notifies that the marking fee(s) per unit for various products details of which are given in the scheduled hereto annexed, have been determined and the fee(s) shall come into force with effect from the dates shown against each:

Sl. No.	Production/ Class of product	No. and Title of Relevant Indian Standard	Unit	Marking Fee per unit	Date of effect
4.	Hard boiled sugar confectionery	IS:1008-1971 Specification for hard boiled sugar confectionery (first revision)	100 kg.	Rs.5.00	1980-01-01
11.	Annatto colour for food products	IS:2557-1963 Specification for annatto colour for food products.	One litre	i) 5 p. per unit for the first 50000 units; & ii) 3 p. per unit for the first 5000 unit and above.	1979-04-01
15.	Caramel	IS:4467-1967 specification for caramel.	1 kg.	10 paise.	1978-04-01

(The Gazette of India, Part II, Section 3, sub-section (ii). July 5th; 1980; 2362-2365)

### 319 FDA guidelines for food fortification

FDA has issued its policy regarding the nutrient fortification of foods, emphasizing that it does not encourage indiscriminate addition of nutrients to foods and does not consider it appropriate or reasonable to fortify fresh produce; meat, poultry, or fish products; or snack foods such as candies and carbonated beverages. The policy states that a nutrient may be added to a food (a) to correct a dietary insufficiency; (b) to restore a nutrient to a level representative of the food prior to storage, handling, and processing, provided that all nutrients in that food that are lost in a measurable amount are restored; (c) to balance the vitamin, mineral, and protein content in proportion to the total caloric content of the food; (d) to avoid nutritional inferiority when the nutrient is added to a food that replaces a traditional food; and (e) to comply with other regulations. The policy also suggests appropriate labeling claims.

(Food Technology. 34(3); 1980; 73)

320 Extraneous matter in ground paprika

FDA has issued a revised administrative guidelines which establishes new action levels for insect and rodent filth in ground paprika and requires that a check analysis be performed for insect and rodent filth in ground capsicums excluding paprika. The action levels are those levels of natural or unavoidable defects permitted in foods produced under good manufacturing practices. Details are in the Federal Register.

(Food Technology. 34(1); 1980; 96)

321 Enzyme-treated milk products in meat

FSQS has approved the use of enzyme-treated, calcium-reduced, dried skim milk and enzyme-treated sodium caseinate as binders or extenders in combination with calcium lactate in meat and poultry products. Details are in the Federal Register.

(Food Technology. 34(4); 1980; 72)

322 New restrictions on food additives in Austria

New regulation for the use of colour-materials in food items was passed on 1st January '80 in Austria. The new regulation will take effect from July 1st, '80. The details are published in Bundes - Gesetzblatt (Austrian, Gazette) No. 279 published on 5th July, 1979. (Spices Newsletter. 14(1&2); 1980; 6)

323 Proposed Amendments to Food Additive Regulations

Proposals have been issued to consolidate and further amend the Miscellaneous Additives in Food Regulations 1974, as amended, and the Emulsifiers and Stabilisers in Food Regulations, 1975, as amended, and to amend the Antioxidants in Solvents in Food Regulations, 1967, as amended. This round of amendments will bring 'flavour enhancers' under control by permitted list, which would provide for their use in foods other than those described as being specially prepared for infants and young children; implement in regulations the provisions E.E.C. Council Directives 78/612/E.E.C., 78/663/E.E.C. and 78/664/E.E.C. concerning specific purity criteria for certain substances; and amend descriptions and specifications of other permitted substances.

Copies of the proposals may be obtained from Food Additives Branch, Ministry of Agriculture, Fisheries and Food, Room 556, Great Westminister House, Horseferry Road, SW1P 2AE.

(International Bottler and Packer. 54(4); 1980; 12)

324 Use of grape colour extract

Welch Foods, Inc., has petitioned FDA to amend the colour additive regulations to provide for the safe use of grape colour extract in foods and drugs. Details are in the Federal Register.  
 (Food Technology. 34(1); 1980; 96)

325 New Acrylonitrile decision

The U.S. Court of Appeals for the District of Columbia Circuit recently reached a decision in the acrylonitrile copolymer beverage container case. In its opinion, the court found FDA inadequate in its inquiry as to the food additive status of acrylonitrile copolymers and remanded the matter back to the Commissioner of Food and Drugs to reconsider the decision banning all beverage containers manufactured with acrylonitrile, regardless of their residual monomer level. In addition to remanding the case, the court considered the proper legal interpretation of the food additive definition and concluded, "when there is no reliable evidence of migration, a substance is not a food additive". This landmark decision appears to open the door for FDA to remove any questions about the continued used of PVC packaging.

(Food Packaging and Labelling Newsletter. 4(1); 1980; 1)

326 GRAS status to phosphates

FDA is proposing to affirm that certain phosphates are GRAS as direct and indirect human food ingredients and to delete calcium hexametaphosphate and potassium polymetaphosphate from the GRAS list as direct human food ingredients because of lack of food use information. Details are in the Federal Register.

(Food Technology. 34(2); 1980; 98)

327 Methylene chloride for decaffeination

Thomas J. Lipton, Inc., has petitioned FDA to amend the food additive regulations to provide for the safe use of methylene chloride as a solvent for decaffeinating tea. Details are in the Federal Register.

(Food Technology. 34(1); 1980; 96)

328 Excise Customs Information Cell

The government has set up a Directorate of Publications (Customs and Central Excise) to disseminate information on matters concerning customs and Central Excise rules. To enable manufacturers of exciseable

products, importers and exporters to know the latest in Central excise and customs laws, procedures, rates of duty, etc., the Directorate would take up a scheme under which copies of customs and Central excise notifications issued by the government would be mailed to registered subscribers within 48 hours of issue against payment of prescribed subscriptions.

(Industrial News Digest. 3(7); 1980; 17)

329 Export Control Order - Fifth Amendment, 1980

G.S.R. 187(E) No. E(C) 0, 1977/AM (147). - In exercise of the powers conferred by Section 3 of the Imports and Exports (Control) Act 1947 (18 of 1947), the Central Government hereby makes the following Order further to amend the Exports (Control) Order, 1977, namely:-

1. This Order may be called the Exports (Control) Fifth Amendment Order, 1980.

(2) In Part 'B', Schedule I --

(i) the existing entries against the S.Nos. indicated below shall be substituted as under:-

S.No. 19 Chillies dried, in all forms.

S.No. 24(iii) Potato seeds (all varieties) and onion seeds.

(ii) the following shall be deleted:-

"4(b)(5) - Peacock tail feathers.

8-Dried Fish other than Prawn, Sharkfins, Fish Flaws, Belach-de-Mere, Bombay Ducks and other Dried Shell Fish.

9-Fish Spawn.

30-Wattle Bark

96-Gum rosin"

(iii) the following items shall be added:

"4(d)-Peacock Tail Feathers.

7(i)(10)-Dried Fish"

(4) In OGL-3 --

(i) in col. 2, the following entry shall be added after S. No. 4(i)(9);  
"(10)-Dried Fish"

(ii) in col. 2, the existing entry appearing against S.No.10 shall be substituted, by the following:

"Chillies dried, in all forms"

(vi) in col. 2, the existing entry appearing against S.No. 9 shall be read as S.No.9(i) and the following shall be added thereafter:-

1	2	3	4
9(ii) Cardamoms (Large)	B.18(ii)		Export allowed to all permissible destinations except to countries having a common land frontier with India.

(xiv) the existing entry appearing against S.No. 57 shall be substituted by the following:-

1	2	3	4
57.	Basmati Rice and other fine and superfine varieties e.g. Tella, Hamsa, Mashuri, Permel, etc.	B.20	Export allowed subject to minimum export prices announced by the Govt. from time to time for different varieties.

(The Gazette of India (Extraordinary), Section 3, Sub-section (i); April 1, 1980; 394-95)

### 330 "Exporter's declaration" on shipping bills

Exporters are required to furnish a declaration, while presenting a shipping bill to the customs authorities, as to the truth of its contents, according to the provisions of section 50(2) of the Customs Act, 1962. This declaration is in addition to the declaration furnished in the shipping bills. As exporters are not making the declaration at present, the Collector of the Customs, Cochin, has notified that all exporters should furnish the declaration as the enumerated below which should be affixed to all copies of the shipping bills:

(Declaration of the exporter:)

1) We hereby declare that the value, sort, specification, quality and description of the goods being exported as mentioned in the shipping bill/other relevant documents are true to the best of our knowledge and belief and also certify that the quality and specifications of the goods as stated in the shipping bill/other relevant documents are in accordance with Terms of the Export Contract entered into with the buyers or consignee in pursuance which the goods are being exported:

2) The exporter(s) is/are not connected with the consignees/buyers as

- a) Agent/Distributor/Indentor/Branch/Subsidiary/concessions.
- b) Collaborator entitled to use the Trade Mark Patent or Design
- c) Otherwise than as ordinary consignee/buyers.

3) Commission payable to the foreign agent/distributor and the approval No. of the R.B.I. thereof.

4) Trade Discount mention in the Invoice/G.R. 1 form is normal in the Export Trade for the particular item: (Strike out whichever is inapplicable).

(Spices Newsletter. 14(1&2); 1980; 8)

## 331 Export Policy

Export policy for 1980-81 has 28 canalised items. The Centre, on April 2, hurriedly announced (in a cyclostyled statement) the export policy for the current financial year, maintaining, basically, the old framework, but still effecting a number of changes in the hope of improving overseas trade. The printed copy of the policy will be available after April 15. The highlights of the new policy include substantial increases in the minimum export prices of footwear, decanalisation of dried fish and large cardamom, canalisation of 28 items through 13 agencies, addition of some items under open general licence 3 and 4, streamlining of licensing procedures, export of feature films, and export of a limited amount of grain. In all, in fact, 30 changes have been made in the Imports and Exports (Control) Act.

**Canalised List** - The following is the new list of canalised items: onions, H/S groundnuts, sesame seed, nigur seed, potato seed, onion seed, shellac, serdlic, buttonlac, gernatine, castor oil, molasses, deoiled rice bran, deoiled groundnut cake, solvent extracted cottonseed cakes, cement, iron ore, manganese ore, barytes, chrome ore, mica, coal and coke, reformer/naphtha/motor spirit, lemongrass oil, feature films and video-tape cinema films and cassettes, semi-processed hides and skins, raw jute, mesta and jute cuttings, footwear, iron and steel, ferro alloys, ferrous scrap, and railway locomotives. Their canalising agencies have also been specified. All exports made up to April 14 will qualify for import replenishment licences in terms of the current policy; advance licences will continue to be granted up to that date. The principal grain allowed to be exported in limited quantities is basmati rice and other fine varieties; the State Trading Corporation will export coarser rice. Pulses are banned from export.

(Data India. No. 14; 1980; 157)

## 332 Customs duty on exports

G.S.R. 233(E).- In exercise of the powers conferred by sub-section (1) of Section 25 of the Customs Act, 1962 (52 of 1962), the Central Government, being satisfied that it is necessary in the public interest so to do, hereby makes the following further amendment in the notification of the Government of India in the Department of Revenue and Banking (Revenue Wing) No. 431-Customs, dated the 1st November, 1976, namely:-

For the Table annexed to the said notification the following Table shall be substituted, namely :-

Sl. No.	Description of goods	Heading Numbers of the First Schedule to the Customs Tariff Act, 1975	Rate of duty
1	2	3	4
1.	Dried fish	03.01/03	50 per cent ad valorem
2.	Dessicated coconut	08.01/13	75 per cent ad valorem
3.	Coconut (copra) oil, refined	15.07	40 per cent ad valorem
4.	Molasses	17.03	Nil
5.	Cocoa, beans, whole or broken, raw or roasted.	18.01/06	25 per cent ad valorem
6.	Natural graphite	25.01/32	40 per cent ad valorem
7.	Fluorspar (or fluorite)	25.01/32	48 per cent ad valorem
8.	Cinnamon leaf oil	33.01/06	70 per cent ad valorem
9.	Rubber tyres and inner tubes	40.01/16	80 per cent ad valorem
10.	Gypsum plaster board	68.01/16	85 per cent ad valorem
11.	Ferto-silicon	73.02	20 per cent ad valorem
12.	GI/MS pipes (Seamless tubes)	73.17/19	50 per cent ad valorem
13.	Cloves	09.04/10	Rs.20 per kilo gram less 7-½ per cent
14.	Nutmegs and Mace	09.04/10	83 per cent ad valorem
15.	Glycerine	15.08/13	55 per cent ad valorem
16.	Natural Rubber	40.01/04	30 per cent ad valorem

(The Gazette of India (Extraordinary), Part II, Section 3, Sub-section (i); No.114; April 23, 1980; p.470)

### 323 Rice export policy

The Government of India has decided to allow export of Basmati rice only under Open General Licence-III subject to minimum export price of Rs. 5,500 per tonne. The export of fine and superfine varieties

of non-Basmati rice will be allowed within a ceiling subject to minimum export price of Rs. 2,750 per tonne. The agencies authorised for such exports are Food Corporation of India, National Agricultural Co-operative Marketing Federation, State Trading Corporation, Andhra Pradesh STC, Maryana Co-operative Marketing Federation, Punjab Civil Supplies Corporation. Export of coarse rice will be permitted only through Food Corporation of India without any minimum export price restriction. (Economic and Commercial News. 10(26); 1980; 3)

### 334 Export of fresh and frozen pomfrets

The Government of India has decided to allow export of fresh and frozen silver pomfrets of sizes 500 grams and above under Op. 1 General Licence-III. There will be no quantitative restriction or minimum export price for such exports. However, export of silver pomfrets of sizes smaller than 500 grams is banned.

During 1979-80, export of fresh and frozen pomfrets was allowed a ceiling. Various representations from the trade were received by the Government for liberalising the export of pomfrets. The export for large size pomfrets and the domestic demand is for pomfrets in smaller sizes, generally 100 gms., which constitutes 90% of the catch. The limit of availability of pomfrets for export is 100% export of pomfrets of sizes 500 grams and above under OGL-III.

In order to remove difficulties to the trade, it has further been decided that silver pomfrets inspected by the Export Inspection Agency before March 31, 1980, against export orders received before this date will not be covered by the ceiling. This applies to all pomfrets even if they are smaller than 500 grams each.

(Economic and Commercial News. 10(26); 1980; 3)

### 335 Cashew kernel export regulation

In the ~~Export of Cashew Nuts (Control and Inspection) Rules, 1960~~, for rule 7, the following may be substituted, namely:

"7. Inspection fee. - A fee of twenty paise for every 11.34 kg. (25 lbs) or fraction thereof of all grades of Cashew Kernels other than the grade "Baby Bits (B1)" and for every 12.70 kg. (28 lbs) or fraction thereof of the grade "Baby Bits (B2)" and a fee of thirty paise for every 5 kg (11.02 lbs) or fraction thereof of all grades of Cashew Kernels shall be charged for labelling and inspection under these rules".

(The Gazette of India. Part II, Section 3, Sub-section (ii). July 5, 1980; 2340)

## 336 Customs tariff for coffee export

G.S.R. 278(E) - In exercise of the powers conferred by sub-section (1) of section 25 of the Customs act, 1962(52 of 1962), and in supersession of the notification of the Government of India in the Ministry of Finance (Department of Revenue) No.12-Customs, dated the 1st February, 1980, the Central Government, being satisfied that it is necessary in the public interest so to do, hereby exempts coffee, falling under Heading No. 1 of the second Schedule to the Customs Tariff Act, 1975 (51 of 1975), when exported out of India, from so much of the duty of customs leviable thereon under the said Second Schedule as is in excess of Rs. 700 per quintal.

(The Gazette of India (Extraordinary) Part II, Section-3, sub-section (i). 28th May; 1980; 544)

## 337 Customs exemption on instant coffee

G.S.R. 67(E) - In exercise of the powers conferred by sub-section (1) of section 25 of the Customs Act, 1962 (52 of 1962) and in supersession of the notification of the Government of India in the Ministry of Finance (Department of Revenue) No.186-Customs dated the 1st September, 1979, the Central Government being satisfied that it is necessary in the public interest so to do, hereby exempts Instant Coffee, falling under Heading No.1 of the Second Schedule to the Customs Tariff Act, 1975 (51 of 1975), when exported out of India, from the whole of the duty of customs leviable thereon under the said Second Schedule.

2. This notification shall be in force upto and inclusive of the 31st December, 1980.

(The Gazette of India (Extraordinary), Part II, Section 3, Sub-section (i); No.46; February 28, 1980; 122)

## QUALITY CONTROL

## 338 Food adulteration cases

Meaning and scope of the words "recommended by the medical profession" put on the label - whether they are hit by Rule 39. (G. Atherton & Co. Private Ltd and others Vs. Corporation of Calcutta) Calcutta High Court.

On Dec. 23, 1975 one Food Inspector of the Corporation of Calcutta by the name of Dr. B. Rai Chowdhuri inspected the godown of the Company at the aforesaid premises and seized from the petitioner No.7 thirty cases of Horlicks, each containing 24 bottles with the exception of one case which contained 21 bottles.

One bottle was sent to the Public Analyst for examination and the Public Analyst gave a report to the effect that the sample of Horlicks which he examined was packed in a glass bottle on which there was a printed paper label bearing a statement "Throughout the world Horlicks enjoys the confidence of the medical profession" and as such R. 39 of the Prevention of Food Adulteration Rules had been infringed and hence it was misbranded.

The report of the Public Analyst was to the effect that R. 39 of the Rules had been contravened as the label bore a statement, namely, "Throughout the world Horlicks enjoys the confidence of the medical profession", and it was misbranded.

#### R. 39 of the Rules is in the following terms:

"There shall not appear in the label of any package containing food for sale the words "recommended by the medical profession" or any words which imply or suggest that the food is recommended, prescribed, or approved by medical practitioners".

What R. 39 lays down is that on any label of any food articles the words "recommended by the medical profession" or words which imply or go to suggest that the article of food has been recommended, prescribed or approved by medical practitioners must not appear.

In the instant case, the label on the Horlicks bottle contained the words "it enjoys the confidence of the medical profession". The question is whether these words are hit by R. 39 of the Rules? Enjoying the confidence of the medical profession does not mean that it has been prescribed or approved by medical practitioners. An article of food might enjoy the confidence of a doctor but it does not necessarily mean that he should approve of it or prescribe it for a particular patient. Therefore, R. 39 is not attracted in the instant case.

(All India Prevention of Food Adulteration Cases. Part-4; 1980; 360-362)

#### 339 PFA Rules - Amendment

G.S.R. 360 - The following draft of rules further to amend the Prevention of Food Adulteration Rules, 1955, which the Central Government proposes to make in exercise of the powers conferred by sub-section (1) of the section 23 of the Prevention of Food Adulteration Act, 1954. (37 of 1954), after consultation with the Central Committee for Food Standards, is hereby published, as required by sub-section(1) of the said section 23 for the information of all persons likely to be affected thereby; and notice is hereby given that the said draft rules will be taken into consideration after the expiry of 45 days from the date on which the copies of the Gazette of India in which this notification is published are available to the public.

Any objection or suggestion which may be received from any person with respect to the said draft rules, before the expiry of the period specified, will be considered by the Central Government.

DRAFT RULES:

1. These rules may be called the Prevention of Food Adulteration (Amendment) rules, 1980.
  2. These rules shall come into force on the date of their publication except sub-rule(1) and (2) of rule 3 which shall come into force after the expiry of six months from the publication of this notification in the official gazette.
  3. In Prevention of Food Adulteration Rules, 1955 (herein after referred to as said rules)-
- (1) After rule 37A of the said rules, the following rule shall be inserted, namely:-
- 37B-Labelling of non alcoholic beverages (carbonated water). Non alcoholic beverages (carbonated water) not containing cola nuts extractives but containing caramel and caffelna and resembling cola beverages shall be labelled as "cola type beverages".
- (2) After rule 48B of the said rules the following rule shall be inserted namely:-
- 48C-Sale of nonalcoholic beverages (carbonated water) not containing cola nut extractives - No person shall sell, store or distribute or manufacture for sale a carbonated water under a descriptive name carrying the word "cola" as a suffix or as a prefix either in advertisements or labels or otherwise, in which cola nut extractives has not been added.
- (3) In rule 50 of the said rules, after sub-rule (12), the following sub-rule shall be inserted, namely:-
- "12-A. Every manufacturer of cola beverages shall maintain an account of colanuts, their extractives or preparations, purchased and utilised and shall present the same for inspection, whenever required to do so by the licensing authority or food inspector or Local (Health) Authority or Food (Health) Authority".
- (4) In appendix B to the said rules, after item A.01.01, the following items shall be inserted namely:-
- (a) "A. 01.01.01 Cola beverage means carbonated water which in addition to the ingredients permitted under item A.01.01. shall contain colanut extractives.
- (b) A.01.01.02-Cola type beverage means carbonated water as defined in item A.01.01 and to which no cola nut extractives has been added but

which contains caffeine and caramel thus resembling cola beverages. (The Gazette of India. Part II, Section 3, sub-section (i); March 29th, 1980; p 711)

#### 340 Draft rules

These rules may be called the Prevention of Food Adulteration (Amendment) Rules, 1980.

In the Prevention of Food Adulteration Rules, 1955, in appendix B, in item A 19, for standard (x), the following shall be substituted, namely:-

"(x) It shall contain raw or refined sesame (til) oil not less than 2.5 percent by weight, but sufficient so that the colour produced by the Baudouin test shall not be lighter than 2.0 Red units in a 1 cm cell on a lovibond scale.

(The Gazette of India. Extraordinary Part II, Section 3, sub-section(i); July 5th 1980; 702)

#### 341 Aflatoxin detection guidelines revised

FDA has announced the availability of revised guidelines concerning the analytical methods used to confirm the presence of aflatoxin in peanut products and other foods. Details are in the Federal Register of Jan. 29.

(Food Technology. 34(3); 1980; 74)

#### 342 No carcinogenicity detected in DDVP

The health and welfare ministry recently made known its view on the carcinogenicity of DDVP, which is widely used as an insecticide for paddy rice, tea, apples and vegetables and as a household spray against flies and mosquitos. According to the ministry, there is no danger from the product at present.

This is based on the study conducted, since last summer, by the Committee of the Carcinogenic Substance Research Group of the Central Pharmaceutical Affairs Council. The Committee took into account, (1) the interim report by the National Institute of Hygiene Sciences, (2) the results of tests by the National Cancer Centre, (3) the results of the examination by the joint committee of WHO and FAO on the product's safety, and (4), the data of NCI (Cancer Research Institute) of the United States.

The Committee emphasized that although DDVP has some mutational attributes, it is not carcinogenic. However, the ministry is continuing

its study at the National Institute of Hygienic Sciences, and hopes to make new findings.

(Japan Chemical Week. 21(1037); 1980; 19,20)

343 Challenge to FDA Saccharin ban

A new study of the risks of cancer through use of saccharin challenges both the FDA ban and the Canadian government's decision on saccharin. This latest study was sponsored jointly by the FDA and the National Cancer Institute and found no increase in cancer risks among the general population through the artificial sweeteners. This conclusion reaffirms the findings by the National Cancer Institute in their study late last year and brings to 11 the number of human studies which have so far failed to link cancer in humans to consumption of saccharin. The results were based on interviews conducted with more than 3,000 bladder cancer patients and almost 6,000 persons without cancer. The study was made by Dr. Alan S. Morrison, of Harvard University School of Public Health.

Dr. Morrison's findings support an earlier study, involving 12,736 individuals in seven countries, published in the May 1979 which concluded: "The present data provide virtually no support for an overall positive association of artificial sweeteners with cancer".

(Food In Canada. 40(5); 1980; 28)

HYGIENE

344 Royal crown uncaps caffeine-free cola

Royal Crown Cola has introduced a new caffeine-free, sugar-free cola called RC 100. The company thus becomes the first soft-drink firm to introduce a caffeine-free cola, which has been the subject of much controversy in recent months. There have been rumours that the Food and Drug Administration is considering ordering cola beverage producers to warn consumers more clearly of the presence of caffeine, which, the FDA fears, may be harmful to some children.

(Food In Canada. 40(5); 1980; 10)

345 Mutagens and chlorination of water

Sulphite treatment of chlorinated drinking water can reduce mutagen levels significantly, says Albert M. Cheh, and others, of the Gray Freshwater Biological Institute of the University of Minnesota (Navarre).

In a series of experiments, the researchers demonstrated that unchlorinated water appeared devoid of mutagens detectible by the Ames

Salmonella test, whereas chlorination produced nonvolatile, direct-acting (not needing enzymes for activation) mutagens. The chlorination agent was also a factor in mutagen level: water treated with free chlorine contained higher levels of mutagens than that treated with chloramine.

In seeking an answer to the problem, the researchers noted that mutagens are electrophiles, while sulfites are nucleophiles and would be expected to attack electrophilic groups. In tests, water samples were chlorinated with free chlorine, dechlorinated with sodium sulfite, then postchlorinated with chloramine. (Chloramine is not generally used for primary disinfection because it is not as strong as free chlorine). The resulting samples then showed significantly lower mutagenic activity by about 50% than undechlorinated water samples.

Because specific mutagens in drinking water often go unidentified, and thus human health risk cannot be pinpointed, the researchers suggest that plant-scale tests be made to determine the effectiveness and cost of dechlorinating treated water with  $\text{SO}_2$  (an established procedure), then chlorinating it before distribution to the consumer. They also suggest that  $\text{SO}_2$  or sulfite might be used to destroy direct-acting mutagens in aqueous industrial effluents.

(Chemical Engineering. 87(1); 1980; 53)

#### TRANSFER OF TECHNOLOGY & NEW INDUSTRIES

##### 346 Indian pesticide industry

The pesticides industry in India is at present in bad shape and saddled with huge unsold stocks of benzene hexachloride (BHC) and malathion valued at around Rs. 90 million. It has been pointed out that unless purchase of the anti-malarial pesticides is resumed immediately the industry will not be able to produce and hold stocks any longer.

The industry is also crippled because of the high prices of basic feedstocks such as benzene. Since the end of 1978 the benzene price has risen by 127% from Rs. 25.5 to Rs. 574.7/kilotonne. This has resulted in a steep rise in the prices of pesticides in the last 15 months.

A direct result of the rise has been the fall in the use of BHC by the small farmer. It was because of its relative cheapness that such farmers used BHC for pest control in the cultivation of cereals and pulses.

(Chemical Age. 28th March; 1980; 12)

347 Industrial sheds allotment

Allotment of sheds in government industrial estates in the Karnataka State will be done at the district level itself hereafter, by a committee headed by the Deputy Commissioner of the district. (SISI Newsletter. 1(4); 1980; 3)

- Acrylonitrile copolymer regulation 325  
Additive, Food Encyclopedia 259 International Council 258 Regulation 322, 323  
Adhesive dispensing gun Food packaing 300  
Adulteration, Food Rules (for) Prevention 338-340  
Aflatoxin detection, Food 341  
  
Bacteria (in) protein production 267  
Baking oven (on) convection principle 280  
Ber, Beverage 268  
Beverage (from ) Ber 268  
Boiler, Regulation 317  
Bottle washer, low cost 271  
  
Caffeine-free cola beverage 344  
Can, open-end (for) dry food 298  
Carcinogenicity (in) DDVP 342  
Cashewnut Export 312 Export regulation 355 Mechanical sheller 277 Project (with) IDA aid 255  
Centrifugal separator Continous type (for) liquid food 273  
Chlorinated water (reduces) mutagen 346  
Coconut, Dehusking machine 278  
Coffee, Export tariff 336  
Coffee, instant Customs exemption 337  
Cola beverage (free from) caffiene 344  
Colour changing lable (for) frozen food 299  
Confectionery, Regulation 318  
Consumption, pesticides 311  
Cooking method Food 263 Meat 264  
Cooling system Corrosion inhibitor 301  
Corrosion inhibitor (for) cooling systems 301  
Customs duty (on) exports 352  
Customs exemption Coffee, instant 337  
DDVP, Carcinogenicity 342  
Diaphragm pump Air powered 285  
Digital grain moisture meter 307  
Digital pH meter 306  
Drier, Spray 281  
  
Egg breaking machine, automatic 279  
Egg shell, utilization 266  
Enzyme treated milk, regulation 321  
Excise/customs information centre 328  
Expenditure (on) research/development 316  
Export Cashewnut 312 Coffee 336 Pepper 314 Pomfret 334 Processed foods 313  
Export Control, regulation 329  
Export declaration (on) shipping bills 330  
Export duty, Food 332  
Export reg. iation Cashewnut 335 Food 331 Rice 333  
  
Filling machine, automatic (for) powder/tablet/capsule 288  
Filter, horizontal (with) centrifugal cleaning 276  
Food grain, production statistics 308  
Fortification, Food Regulation 319  
Fruit, Storage 25  
  
Gas chromatograph, Electronic 303  
Grape colour, extract Regulation 324  
Guarseed, Production 309  
  
Heat exchangers 294 Heat rec very (during) milk cooling 262  
  
Industrial sneds, Allotment 347  
International Council (for) food additives 258  
  
Leak detector, Portable 304  
Liquid food Packaging 295 Refractometer 305  
  
Marketing Process, Milk 265  
Meat Cooking method 264 Netting (to reduce) driploss 261 Tenderizer 290  
Methylene chloride, Regulation 327  
Milk, skim, heat treated Regulation  
Milk Marketing process 265 Thermosealed plastic pouches 297

- Milk cooling, Heat recovery 262  
Mixer  
    Planetary 283  
    Vertical 282  
Mutagen, reduction (in)  
    chlorinated water 345  
Oil extraction (by) Pressure 270  
Optics (for microscopes) 293  
Orange bagging machine 289  
Oven (on) convection principle 280  
  
Paprika, ground  
    Extraneous matter 320  
Pepper, Export 314  
Pest control, Electronic 257  
Pesticide  
    Consumption 311  
    Production 310  
Pesticide industry (in) India 346  
Phosphate, Regulation 326  
Plastic container, thin walled (for)  
    packaging 296  
Plastic pouches, thermosealed (for)  
    milk 297  
Pomfret, Export 334  
Powder/tablet/capsule filling  
    machine 288  
Processed foods, Export 313  
Production  
    Food grain 308  
    Guarseed 309  
    Pesticides 310  
Protein (from) bacteria 267  
Protein, Production technology 260  
Pump  
    Air powered 285  
    Solar 286  
  
Refractometer (for)  
    liquid food 305  
Refrigerator/water cooler 291  
Rice, Export policy 333  
Rotary motion shaker 275  
Rotary vane feeder 284  
  
Saccharin (not cause of)  
    cancer 343  
Separators  
    Centrifugal (for)  
        liquid food 273  
        Continous 274  
Solar pump (in) India 286  
Solar water heater/solar still 287  
Solvent extraction (by)  
    pressure 270  
Solvent extractor, Automatic 302  
Spray drier, Food 281  
Storage, Fruit 256  
  
Tea leaf  
    Continuous processing machine 269  
Tenderiser, Meat 290  
Trade information 315  
  
Waste Utilization  
    Egg shell 266  
Water cooler/refrigerator 291  
Water distiller, High speed 272











